

Appl. No. 09/817,830
Amdt. Dated 12/13/2005
Reply to Office action of 9/15/05

REMARKS/ARGUMENTS

The Examiner is thanked for the clarity and conciseness of the previous Office Action, and for the citation of references, which have been studied with interest and care.

This Amendment is in response to the Office Action mailed September 15, 2005. In the Office Action, claims 1-2, 4-5, 10-12, 14-15, 20-22, 25-27, 29-30, and 35 stand rejected under 35 U.S.C. § 103. Applicant has amended independent claims 1, 11, 21, and 26 to clarify the embodiments of the invention.

Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Applicant would like to address the Office Action's contention that user-specific acoustic models and/or adapting user-specific acoustic models is not particularly mentioned in the specification. Applicant respectfully disagrees with the Examiner.

Throughout Applicant's detailed description, reference is continuously made to adapting acoustic models for a client device/user and storing and using the adapted acoustic model for the user locally at the client device.

For example, on page 5, Applicant's patent application states:

...the client device can be a small mobile computing device and the server can be coupled to the mobile client device through a network. The acoustic model adaptor adapts the acoustic model for the mobile client device based upon digitized raw speech data or extracted speech feature data received from the client device [i.e. from the user] when there is a network connection between the client device and the server. The server stores the adapted acoustic model. The mobile client device can download the adapted acoustic model and store and use the adapted acoustic model locally at the client device [i.e. for the user]. This is advantageous because the regular updating of acoustic models is known to improve speech recognition accuracy...*Moreover, because mobile client devices with speech recognition functionality are typically single-user systems, the adaption of acoustic model with a user's speech will particularly improve the recognition accuracy for that user. Thus, the user's experience is enhanced because the client device's speech recognition accuracy is continuously improved with more usage.* (Emphasis Added).

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Applicant respectfully submits that in view of the above paragraph and in view of the overall detailed description, it is clear that embodiments of the invention are directed to adapting and updating user-specific acoustic models for use by a user with a mobile client device.

Rejection Under 35 U.S.C. § 103

Claims 1-2, 4-5, 10-12, 14-15, 20-22, 25-27, 29-30, and 35 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious over U.S. Patent No 6,442,519 issued to Kanevsky et al. (hereinafter Kanevsky) in view of U.S. Patent No. 6,519,561 issued to Farrell et al. (hereinafter Farrell).

Applicant respectfully traverses the Office Actions §103 obviousness rejections in their entirety, in light of the following remarks. As stated in MPEP §2141.03:

A prima facie obviousness rejection requires the three basic criteria be met. First, there must be some teaching, suggestion, or motivation, either in the references of themselves, or in the knowledge generally available to one skilled in the art, to modify the reference or to combine the references. Second, there must be some reasonable expectation of success. Finally, the prior art reference, or references when combined, must teach all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's disclosure. MPEP §2141.03. (Emphasis added).

As previously discussed in the prior Response, Applicant respectfully submits that Kanevsky does not teach or suggest Applicant's claim limitations and in fact, teaches away from Applicant's claim limitations. In the prior Office Action, and in the current Office Action, Kanevsky (col. 7, line 19 to col. 8, line 64) is relied upon as allegedly teaching an acoustic model adaptor locatable at the server to adapt an acoustic model specifically for a user of the client device and wherein, when there is a network connection between the client device and the server, the server and client device together implement a single user speech recognition system in which digitized raw speech data of a user or extracted speech feature data of a user is received by the server from the client device and the acoustic model adaptor adapts a user-specific acoustic model for the client device.

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To begin with, Kanevsky (column 7, lines 19-40), teaches, different user acoustic models are clustered into classes according to acoustic similarities of the users, thereby clustering the speakers based on vocal and verbal similarities...First, in step 122, acoustic profile data for individual users previously accumulated and stored in the local databases are passed over the network 100 to the server 106...The users' acoustic data are compared in step 124 of the server 106...In step 126, based on that comparison, users are clustered into classes of similar users according to acoustic voice similarities...Then, in step 128, different acoustic models (i.e., different domains) are compared in sets associated with similar users to derive cluster update data...Finally, in step 130, acoustic model components for similar users are modified relative to user production activities...So acoustic model components, including data about users and information about user activities, are thereby synchronized in all similar acoustic models across the network. (Emphasis Added).

Thus, Kanevsky is directed the updating of similar audio models based on multiple connected computer systems and multiple users having similar characteristics across a network such that similar acoustic models across the network are synchronized with one another.

This is completely different than Applicant's amended independent claims in which, *when there is a network connection between the client device and the server, the server and client device together implement a single user speech recognition system in which speech digitized raw speech of a user or extracted speech feature data of a user is received by the server from the client device and the acoustic model adaptor adapts a user-specific acoustic model for the client device based solely on the digitized raw speech data of the user or the extracted speech feature data of the user and the server stores the adapted user-specific acoustic model for use only by the associated client device and user.*

As previously discussed, Applicant respectfully submits that Kanevsky does not teach or suggest the limitations of Applicant's amended independent claims, and actually teaches away from Applicants amended independent claims, because Kanevsky is related to updating similar acoustic models based upon multiple connected computer systems and multiple different users

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having similar characteristics such that similar acoustic models across the network are synchronized with one another.

Kanevsky quite clearly does not teach or suggest a single user speech recognitions system wherein an acoustic model adaptor adapts a user-specific acoustic model for a client device based solely on data from the specific user and a server then stores the adapted user-specific acoustic model for use only by the associated client device and user.

In fact, the background section of Kanevsky in column 1, lines 51-61 sets forth the disadvantages of single user speech recognition systems. Particularly, Kanevsky teaches that: "While generally recognizing spoken words with a relative high degree of accuracy, especially in a single user system, these prior speech recognition systems still, frequently, make inappropriate recognition errors. Generally, for single user systems, these errors can be reduced with additional user specific training...However, additional training and increased data volume that must be handled during training are undesirable..."

Thus, Kanevsky actually teaches away from *single use speech recognition systems* Kanevsky is directed to remedying the problems of single user systems with its invention directed to speech recognition updating similar audio models based on multiple connected computer systems and multiple users having similar characteristics across a network such that similar acoustic models are synchronized with one another. As set forth in the MPEP §2145, it is improper to combine references where one of the references teaches away from the combination.

The Office Action, on page 3 of the Office Action, recognizes that Kanevsky fails to disclose the step of adapting the user-specific acoustic model for the client device based solely on the digitized raw speech data of the user or the extracted speech feature data of the user and the server stores the adapted user-specific acoustic model for use only by the associated client device and user.

However, the Office Action states that Farrell teaches the step of adapting the user-specific acoustic model for the client device based solely on the digitized raw speech data of the

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user or the extracted speech feature data of the user and the server stores the adapted user-specific acoustic model...

Applicant respectfully submits that the combination of Kancvsky with Farrell, even if they were properly combinable, would still not teach or suggest Applicant's amended independent claim limitations of amended independent claims 1, 11, 21, and 26 directed to an acoustic model adaptor that adapts a user-specific acoustic model for the client device based solely on the digitized raw speech data of the user or the extracted speech feature data of the user and the server stores the adapted user-specific acoustic model *for use only by the associated client device and user in applications utilizing speech recognition.*

In contrast, Farrell does not teach or suggest a speech-recognition system for use with applications utilizing speech recognition but, instead, is directed to "a speaker verification system that embodies the capability to adapt models learned during the enrollment component to track aging of a user's voice." (Farrell, Abstract, emphasis added).

Particularly, as set forth in Farrell, "Speaker verification is a speech technology in which a person's identity is verified using a sample of his or her voice...In particular, speaker verification systems attempt to match the voice of the person whose identity is undergoing verification with a known voice...Speaker verification consists of determining whether or not a speech sample provides a sufficient match to a claimed identity." (Farrell, column 1, lines 25-45).

The Office Action particularly relies on column 4, lines 8-25, of Farrell. This section states that: "The adaption process is completely transparent to the user...For example, a user may telephone into his or her 'private branch exchange' to gain access to an unrestricted outside line...As is customary with a speaker verification system, the user may be requested to state his or her password...With the adaption system of the present invention, this one updated utterance can be used to adapts the speaker verification model." (Emphasis added).

As set forth in Farrell, Farrell is directed to speaker verification systems and does not teach or suggest adapting a user-specific acoustic model for the client device based solely on the digitized raw speech data of the user or the extracted speech feature data of the user and the

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server stores the adapted user-specific acoustic model *for use by the associated client device and user in applications utilizing speech recognition.*

Applicant respectfully submits that Farrell is not directed towards applications utilizing speech recognition but is instead directed to a speaker verification system.

As previously discussed, Kanevsky does not teach or suggest the claim limitations of Applicant's independent claims 1, 11, 21, and 26 for which it is set forth, and further, teaches away from Applicant's independent claims 1, 11, 21, and 26, and thus is not properly combinable with Farrell. Moreover, Farrell does not teach or suggest the limitations of Applicant's amended independent claims 1, 11, 21, and 26.

Accordingly, Applicant's amended independent claims 1, 11, 21, and 26 should be allowable and passed to issuance. Further, the dependent claims that depend therefrom are also patentable.

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Conclusion

In view of the remarks made above, it is respectfully submitted that pending claims 1-2, 4-5, 10-12, 14-15, 20-22, 25-27, 29-30, and 35 define the subject invention over the prior art of record. Thus, Applicant respectfully submits that all the pending claims are in condition for allowance, and such action is earnestly solicited at the earliest possible date. The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application. To the extent necessary, a petition for an extension of time under 37 C.F.R. is hereby made. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such account.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 12/13/2005

By 

Eric T King

Reg. No. 44,188

Tel.: (714) 557-3800 (Pacific Coast)

Attachments

12400 Wilshire Boulevard, Seventh Floor
Los Angeles, California 90025

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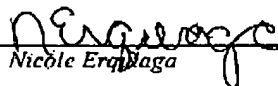
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